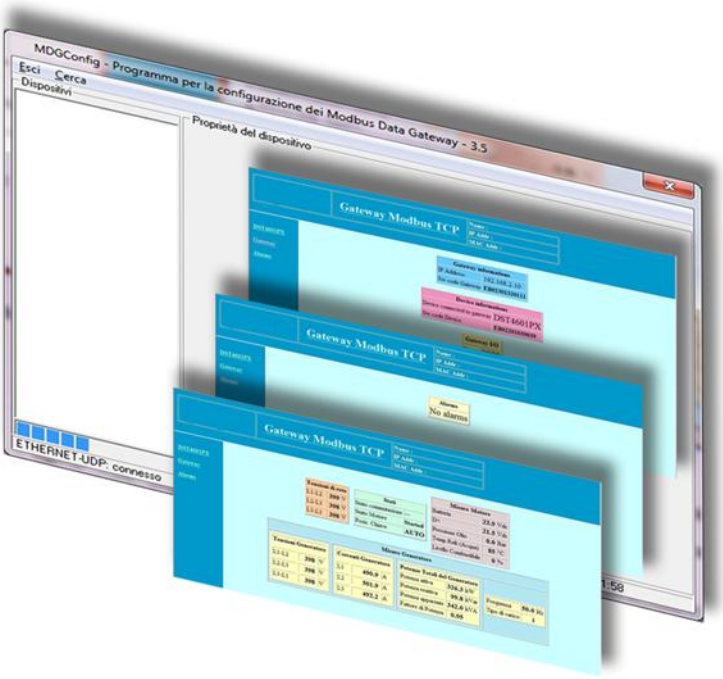
Empowering your control



User Manual

Mdgconfig. Ver. 3.3 (Modbus Data Gateway Configuration Tool)

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1. General Information

This PC program is dedicated to connection with “Modbus TCP/RTU Gateway” device by Sices.

It allows displaying and modifying the configuration of this device and supervising its statuses and operation.

Read this manual carefully before using the program and attempting connection to the device.

2. PC Supervision and Configuration Program

Together with the GMT (Gateway Modbus/Tcp), SICES s.r.l. provides a PC software to supervise and configure the device via both Ethernet and the serial port. This software is named “ModBus Data Gateway Configuration Tool” (the executable file is named MDGConfig.exe). This program manages web server gateways (firmware version 1.00 or more recent). It is also compatible with previous versions. According to the firmware version, it presets by displaying only the parameters and the active sections.

2.1 Program Installation

The program is sold individually or together with SicesSupervisor supervision software. In the first case, run the “Setup.exe” file on the installation CD to install the program. In the second case, select “MDGConfig.exe” during SicesSupervisor installation.

2.2 Program Execution

The program can be executed in two ways: by double-clicking on the "MDGConfig.exe” file, or by selecting “ModBus Data Gateway Configuration Tool” from the start menu.

2.2.1 If Installed Individually

The “MDGConfig.exe” is in the “C:\Programs\Sices\Modbus Data Gateway Configuration Tool” folder; from the start menu, follow the “Programs→ Sices → Modbus Data Gateway Configuration Tool” path.

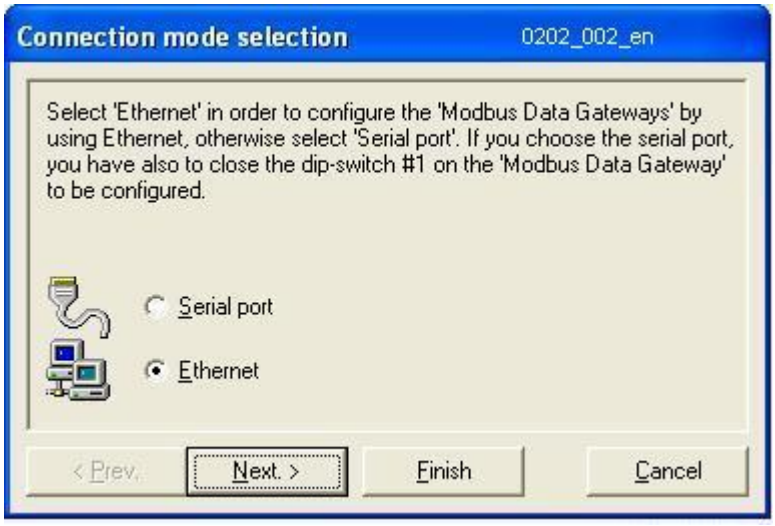
2.2.2 If Installed with SicesSupervisor

The “MDGConfig.exe” is in the “C:\Programs\Sices\SicesSupervisor” folder; from the start menu, follow the “Programs→ Sices → SicesSupervisor” path.

2.3 Program Description

When launched, the program asks for language selection:

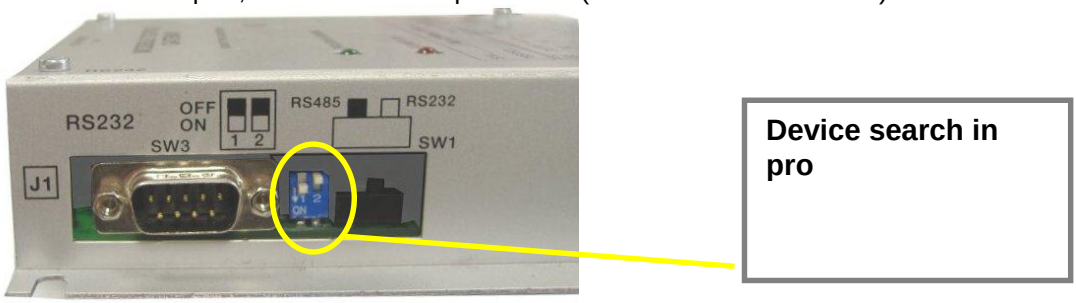
Once the desired language is selected, click on "**OK**" to confirm. The program will display the following window:


Connection mode selection
0202_002_en
Select 'Ethernet' in order to configure the 'Modbus Data Gateways' by using Ethernet, otherwise select 'Serial port'. If you choose the serial port, you have also to close the dip-switch #1 on the 'Modbus Data Gateway' to be configured.
Serial port
Ethernet
< Prev.
Next. >
Finish
Cancel

Choose whether the program should configure the device via Ethernet or via the serial port. It is recommended to configure the device for the first time with the serial port. **Use the serial port if the current GMT IP address is not recognized and the Ethernet network being used does not support the UDP protocol**.

2.3.1 Serial Port

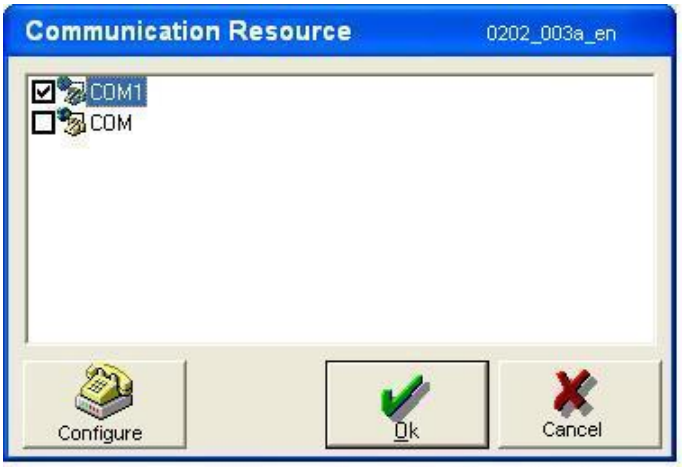
To use the serial port, close the GMT dip switch 1 (SW3 bank switch 1= ON).



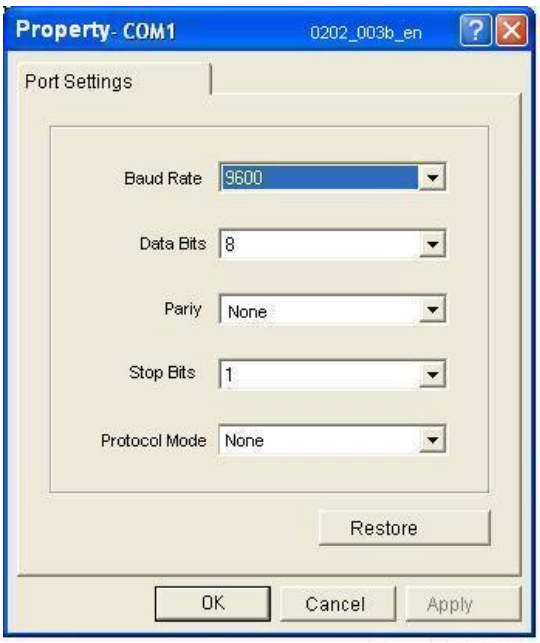
Open it again at the end of configuration, otherwise the Ethernet connection will not work.

Select "Serial port" and click on "Finish".

The program will display the following window:



It will then be possible to select the serial port to be used and to set the configuration parameters (baud rate, parity, etc.) for the selected port by clicking on "Configure".

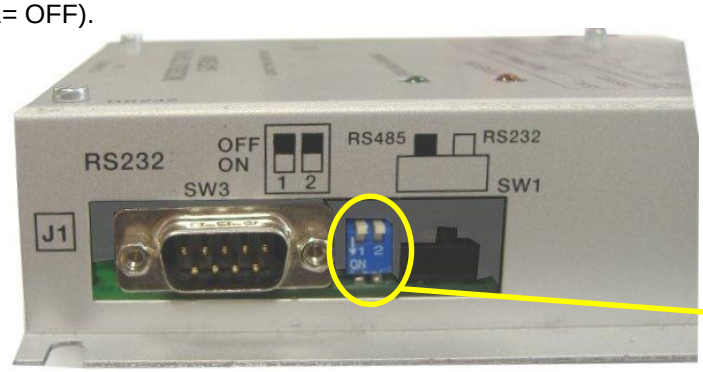


By default, the GMT is configured for 9600 baud, no parity, 1 start bit and 1 stop bit.

Once finished, click on "OK".

2.3.2 Ethernet

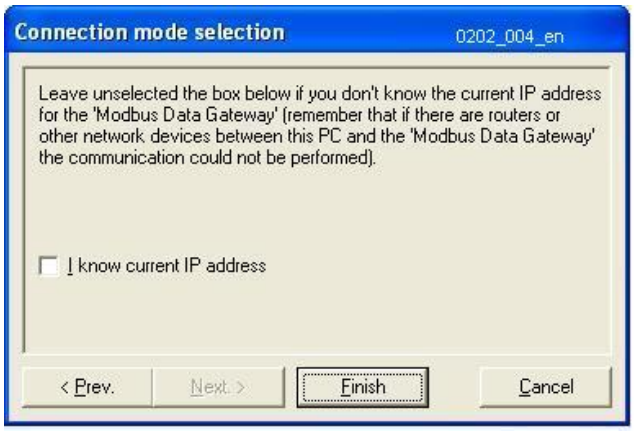
To use the Ethernet network for configuration, open the GMT dip switch 1 (SW3 bank switch 1= OFF).



g

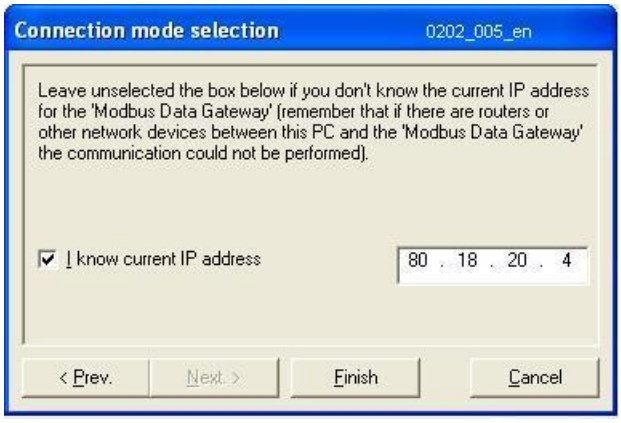
Select “**Ethernet**” and click on "**Next**".

The program will display the following window:


Connection mode selection
0202_004_en
Leave unselected the box below if you don't know the current IP address for the 'Modbus Data Gateway' (remember that if there are routers or other network devices between this PC and the 'Modbus Data Gateway' the communication could not be performed).
I know current IP address
< Prev.
Next. >
Finish
Cancel

If the current GMT IP address is unknown, leave the "I know current IP address" option unselected. In this case, the program will search for all the GMT connected online, by means of the UDP protocol. When the search is complete, select the desired GMT identified by its serial number. If the network does not support UDP protocol, it is not possible to select the previous option.

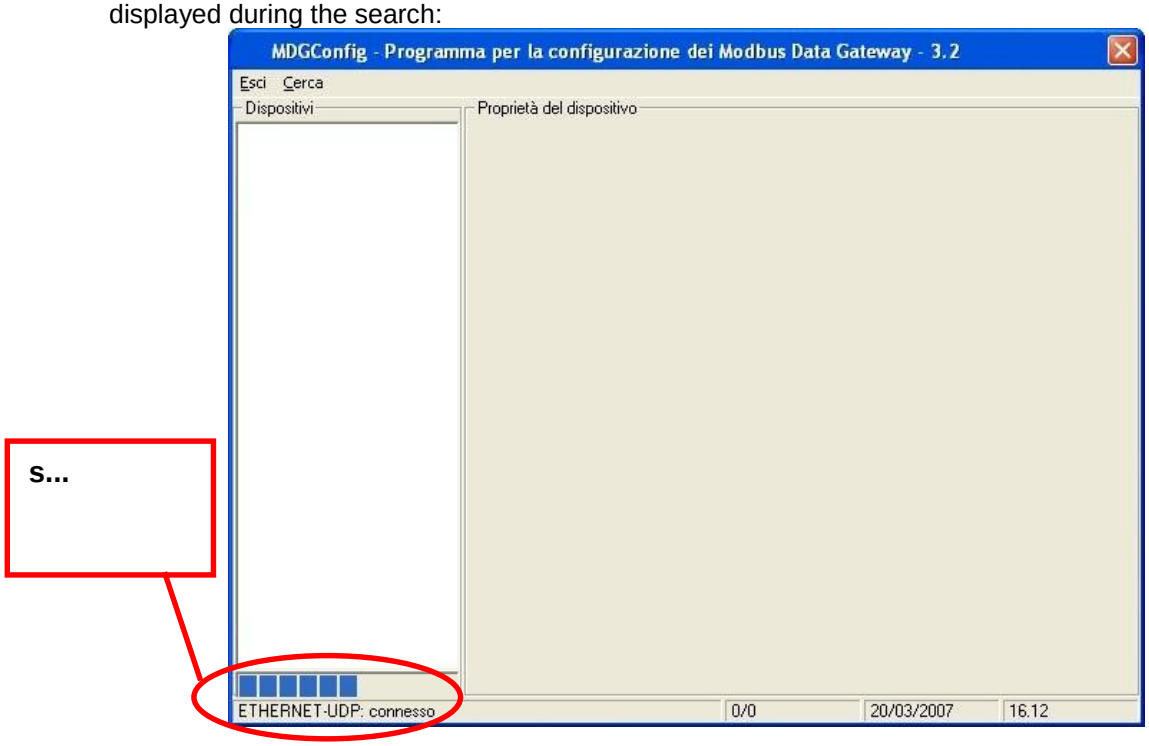
If the IP address is known, select the previous option and type this address in the relevant field (displayed when selecting the option):


Connection mode selection
0202_005_en
Leave unselected the box below if you don't know the current IP address for the 'Modbus Data Gateway' (remember that if there are routers or other network devices between this PC and the 'Modbus Data Gateway' the communication could not be performed).
I know current IP address
80 . 18 . 20 . 4
< Prev.
Next. >
Finish
Cancel

Click on "Finish" (further details in section 2.3.3).

2.3.3 GMT Search

The program will now try to contact the GMT(S) online. The following window will be displayed during the search:



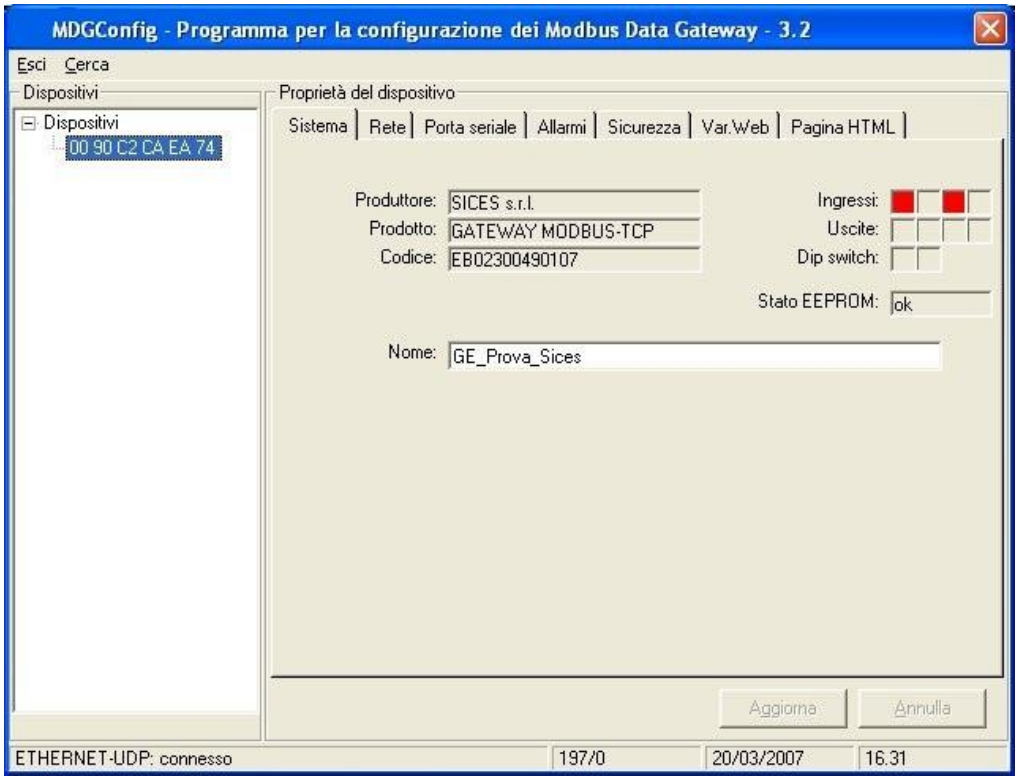
Once finished, the detected GMT list will be displayed in the left hand side of the window above. If no GMT is detected, the following error message will be displayed:

If this message is displayed, there are no gateways in the network, or the program could not use the TCP or UDP port. If the 'gateway not found' message is displayed without searching,

the program could not use the device: Check that there are no other programs running that might use the same port (e.g., SicesSupervisor).

Each GMT is displayed with its network interface MAC address, which is unique. Click on one of them to start the configuration.

2.4 Configuration Window



From here, it is possible to configure all the GMTs connected to the Ethernet network or to the PC serial port.

The menu bar is at the top of the window. It only has two items:

- **Exit**: To close the program
- **Search**: To search for GMTs, as described in the previous section.

The status bar is at the bottom of the window. It displays information about the application status, but no controls can be performed from here (there are some exceptions). The displayed information (from left to right) is:

- The used communication device (Ethernet or serial port) and the communication status.
- A counter for the ModBus/TCP messages sent in the Correct/Wrong format. This counter will be reset by double-clicking on it.
- The current system date and time.

On the left hand side, there is a list of all the GMTs detected (listed according to their network interface MAC address).

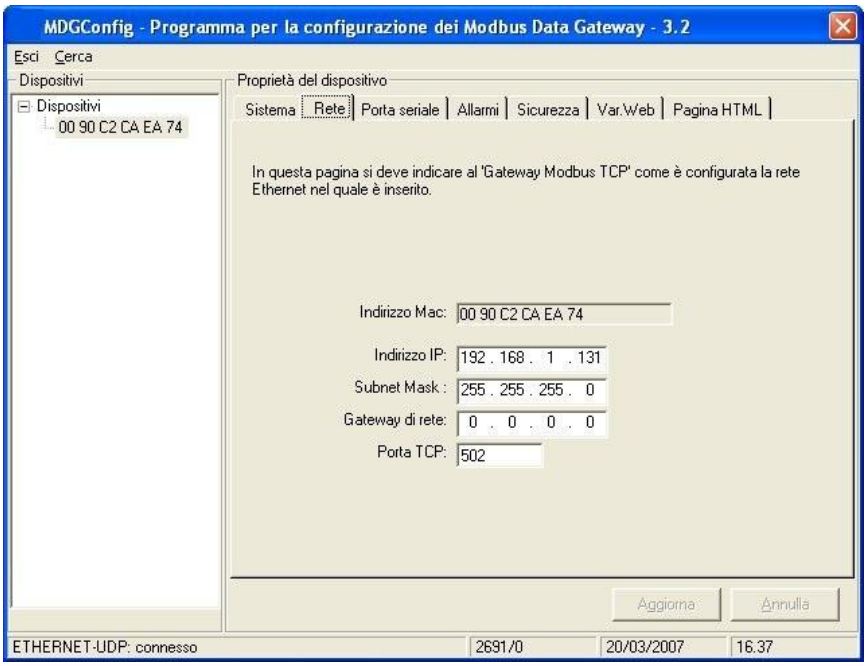
On the right hand side of the window, once a GMT is selected, all the configuration tools are displayed.

There are five steps for the configuration (standard version), respectively in the "System", "Network", "Serial port", "Alarms" and "Security" tabs (the "Alarms" tab might not be displayed if not supported by the GMT). In the web server version (version 1.00 and more recent ones), there are 2 more tabs: “Web Vars” and “HTML Page”.

The first step is shown in the previous figure. This step is for configuring the name for the GMT. In addition, the information acquired by the GMT are displayed:

- Three fields that identify the manufacturer, the product, and the software release installed.
- The input status (the boxes are red if the relevant inputs are active).
- The output status (the boxes are red if the relevant outputs are active). Double-click on an output box to change its status.
- The status of the two dip switches of the SW3 bank.
- The status of the board non-volatile memory.

Click on the "Network" tab to display the following window:


MDGConfig - Programma per la configurazione dei Modbus Data Gateway - 3.2
Esci Cerca
Dispositivi
Dispositivi
00 90 C2 CA EA 74
Proprietà del dispositivo
Sistema Rete Porta seriale Allarmi Sicurezza Var.Web Pagina HTML
In questa pagina si deve indicare al 'Gateway Modbus TCP' come è configurata la rete Ethernet nel quale è inserito.
Indirizzo Mac: 00 90 C2 CA EA 74
Indirizzo IP: 192 . 168 . 1 . 131
Subnet Mask : 255 . 255 . 255 . 0
Gateway di rete: 0 . 0 . 0 . 0
Porta TCP: 502
Aggiorna
Annulla
ETHERNET-UDP: connesso
2691/0
20/03/2007
16.37

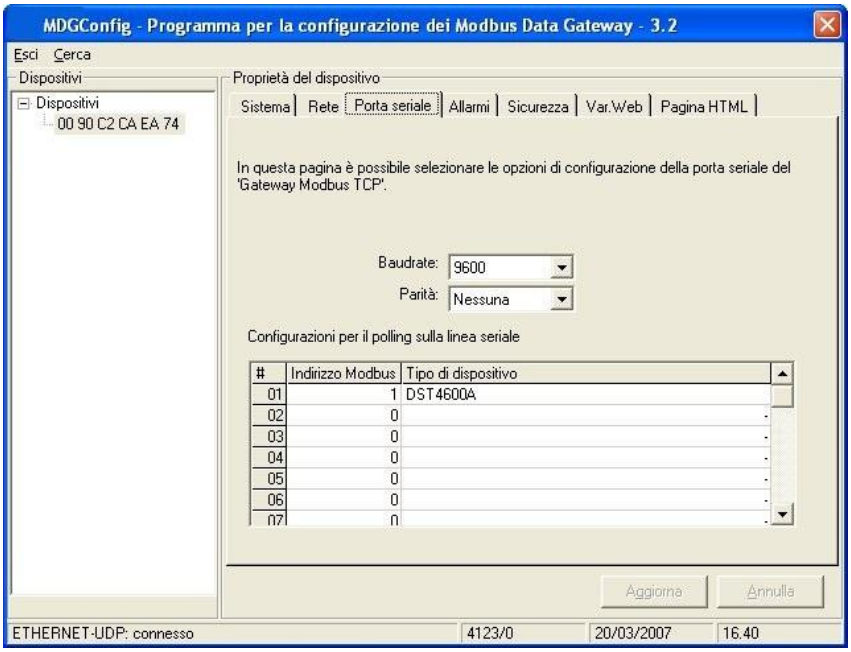
This tab is for configuring the GMT Ethernet. An IP address is assigned to the GMT, the "sub-net mask" for its network and the TCP port to be used are configured. For the first two pieces of information, contact the network administrator. The TCP port should always be set at 502, if possible.

GMT does not support the DHCP standard network protocol, that is the automatic assigning of the IP addresses in a network. This is a very common protocol for Windows networks, where there is a server (DHCP server) for this function. If the network where the GMT is to be installed uses the DHCP protocol, an IP address must be disabled from the DHCP server (so that it cannot be used by others) and assigned to the GMT. Contact the network administrator to perform this operation.

It is also possible to set the network gateway IP address (router, or other) for those cases when the GMT and the PC it should work with are in two separate networks (ask the network administrator).

At the top of the tab, the network interface MAC address is displayed.

Click on the "Serial port" tab to display the following window:



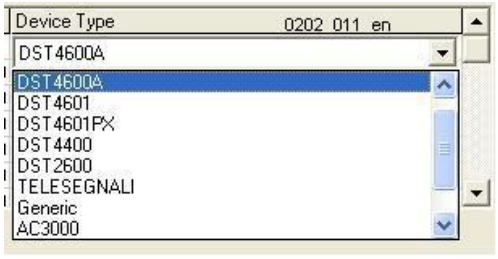
This tab is for configuring the GMT serial port. Communication speed and parity type are configured here.

If Sices boards are used to control the gen-sets, a list (by type and serial address) of devices can be created: this list will be periodically checked by the GMT if the Ethernet connection is not active, in order to detect possible faults and notify them on the Ethernet. Up to 16 devices can be configured.

In addition to set the log for device polling, this parameter is used for:

- Alarm management: The alarms are managed only for DST4601 and DST4600A device types. For the other device types, there is no polling via Modbus and the "Alarms" tab is not available.
- Alarm reset management (according to the selected device, a different control is sent)
- Web page: The name of the connected device is shown in the menu frame.
- Telesegnali status interrogation for DST4600A

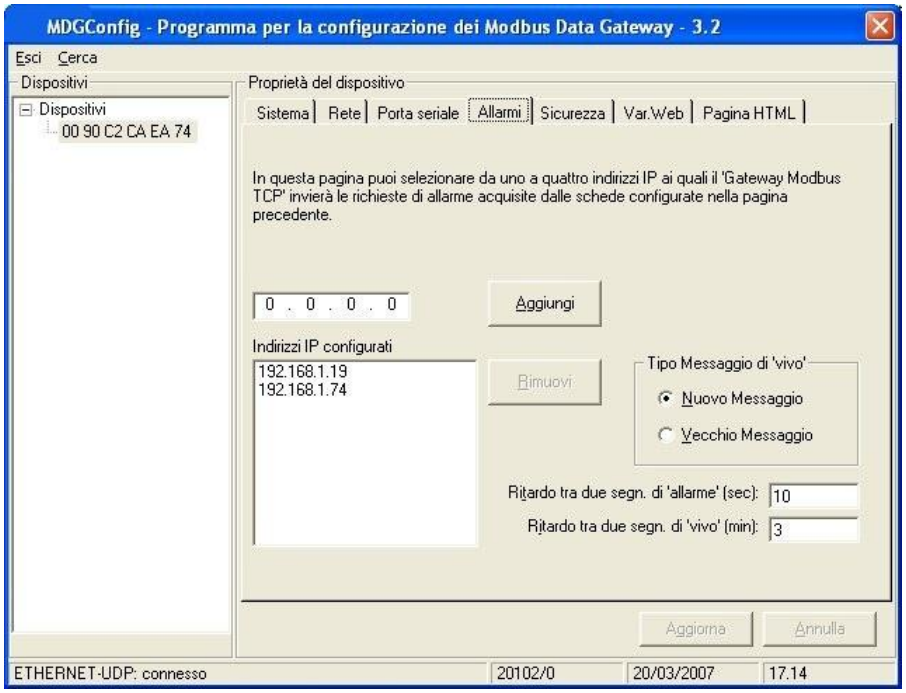
Devices that can be selected:



In case a generic device is selected, there will be no polling via Modbus, except for those explicitly set for reading web variables.

The first device in the table (as both address and device type) will be set to manage html pages and alarms. More than one device can be set for polling, but those after the first one are overlooked for managing the alarms and the html pages.

Click on the "Alarms" tab to display the following window:


MDGConfig - Programma per la configurazione dei Modbus Data Gateway - 3.2
Esci Cerca
Dispositivi
Dispositivi
00 90 C2 CA EA 74
Proprietà del dispositivo
Sistema Rete Porta seriale Allarmi Sicurezza Var.Web Pagina HTML
In questa pagina puoi selezionare da uno a quattro indirizzi IP ai quali il 'Gateway Modbus TCP' invierà le richieste di allarme acquisite dalle schede configurate nella pagina precedente.
0 . 0 . 0 . 0
Aggiungi
Indirizzi IP configurati
192.168.1.19
192.168.1.74
Rimuovi
Tipo Messaggio di 'vivo'
Nuovo Messaggio
Vecchio Messaggio
Ritardo tra due segn. di 'allarme' (sec): 10
Ritardo tra due segn. di 'vivo' (min): 3
Aggiorna
Annulla
ETHERNET-UDP: connesso
20102/0
20/03/2007
17.14

This tab is for configuring the IP addresses where to send messages for possible alarms detected on SICES boards connected to the GMT serial port. If the list "Configured IP addresses" is left empty, the alarm messages will be sent in 'broadcast' mode (that is to all the PCs connected on the network) by means of the UDP network protocol. If the network does not support this protocol (or the 'broadcast' mode), up to four IP addresses can be added to the above-mentioned list: the alarm messages will be sent only to these IP addresses. To add an IP address, type it in the field above the list, then click on "Add". To remove an IP address from the list, click on it from the list and then click on "Remove".

Keep Alive Type – It is only displayed in versions following the 1.00 one (web server gateways).

A New Keep Alive message has been introduced in the new gateway versions: it allows sending status variations (both when an alarm is activated and deactivated). It is also possible to enter additional configurable data (for example: network status, key position, engine status, etc.). The gateway can thus immediately send a message about the activation/deactivation of an alarm or about a status change.

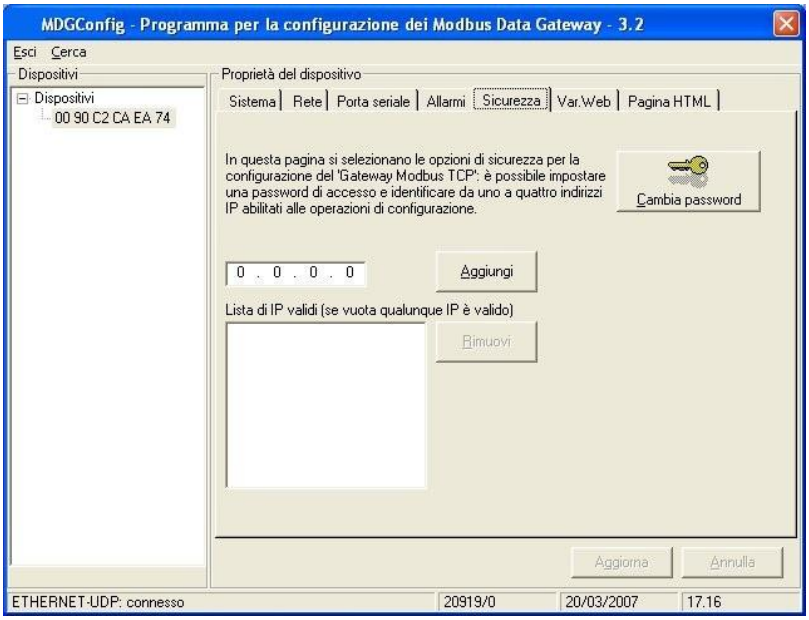
This option allows selecting which type of message should be managed.

The standard gateway versions, earlier than the 1.00 one, only send the old message type.

Delay between 'alarm' signals: When one of the SICES boards connected to the serial port is in an alarm status, the GMT sends one or more network messages at regular intervals. This value allows setting a delay (in seconds) between these two messages.

Delay between 'alive' signals: By setting a value different from 0 in this box, the GMT will send a Keep Alive network message at regular intervals. The aim of this message is to inform those PCs that are connected that the GMT is working correctly. This message also includes a status indicator for the serial communication with the SICES boards, so that the PC can detect faults also between the GMT and the boards. These messages are sent to the same IP address than for the alarms (or in 'broadcast' mode if no IP address is set).

Click on the "Security" tab to display the following window:


MDGConfig - Programma per la configurazione dei Modbus Data Gateway - 3.2
Esci Cerca
Dispositivi
Dispositivi
00 90 C2 CA EA 74
Proprietà del dispositivo
Sistema Rete Porta seriale Allarmi Sicurezza Var.Web Pagina HTML
In questa pagina si selezionano le opzioni di sicurezza per la configurazione del 'Gateway Modbus TCP': è possibile impostare una password di accesso e identificare da uno a quattro indirizzi IP abilitati alle operazioni di configurazione.
Cambia password
0 . 0 . 0 . 0
Aggiungi
Lista di IP validi (se vuota qualunque IP è valido)
Rimuovi
Aggiorna
Annulla
ETHERNET-UDP: connesso
20919/0
20/03/2007
17.16

This tab is for configuring the GMT security options. It is possible to set a password, which will be required when connecting for Ethernet configurations. In addition, it is possible to create a list of up to four IP addresses for Ethernet connection. If no address is set, the Ethernet connection is available from any IP address. If the network uses the DHCP, this function cannot be used, since not all the networked PC addresses are known or are unmodified.

Once all the steps have been performed, even if only one option has been changed, the "Update" button will be enabled. The configuration will be sent to the GMT by clicking on it (NB: if the program is closed, another GMT is selected, or a new search is launched without first clicking on "Update", the configurations made will be lost). By clicking on "Cancel", it will be possible to read the current configuration form the GMT (this is an automatic operation performed when clicking on a GMT on the left hand side of the window).

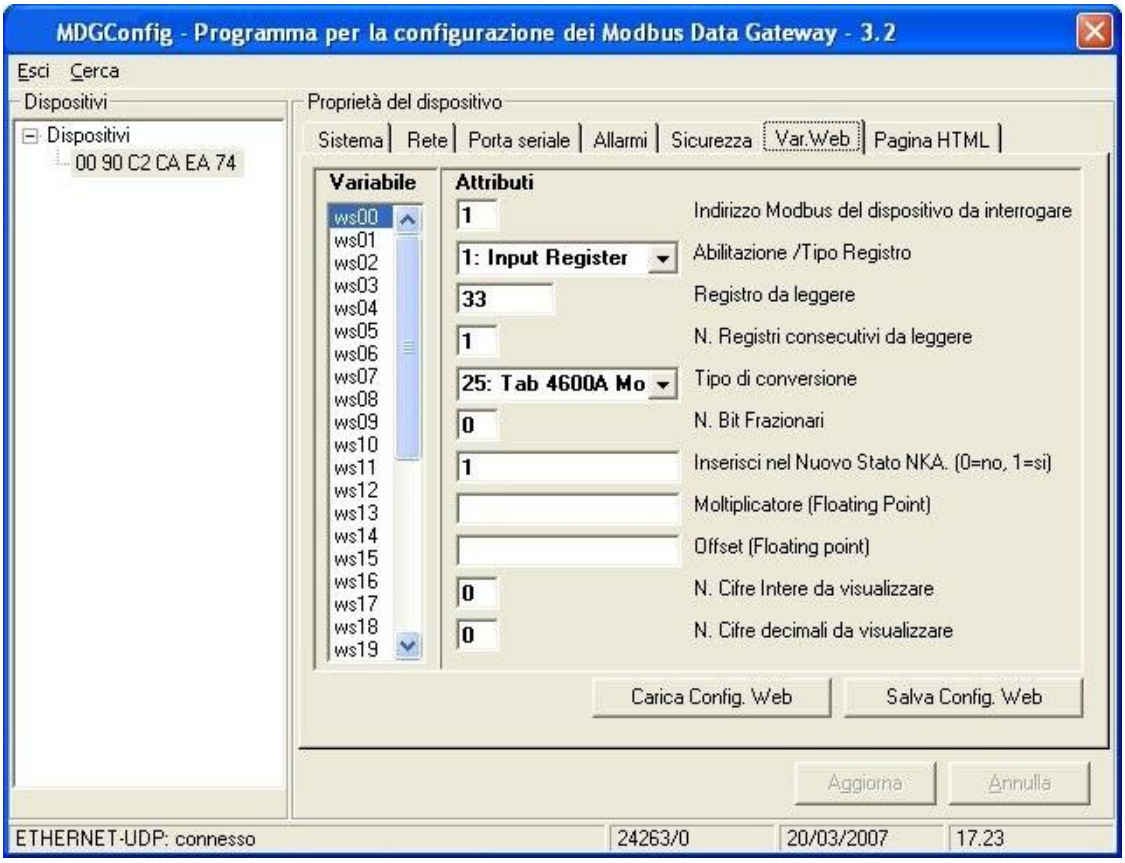
3. Configuring the Web Page on the Gateway

There are two tabs from where to configure the web page: “Web Vars” and “HTML Page”.

In these two tabs, it is possible to set the data to be used by the connected device, and to download the web page of the device.

For the configuration and use of the web page, the MdgConfig program checks that the Gateway firmware version is 1.00 or later. The Web Vars and HTML Page tabs are only displayed if the connected Gateway firmware version is 1.00 or later. Previous versions do not support the http connection.

3.1 Web Variables Configuration.



It is possible to enter variables in the configurable web page.

35 string variables are available:

ws00-ws29 30 small web variables (up to 10 characters)

wg00-wg04 5 great web variables (up to 50 characters)

The Gateway device manages the zhtml pages.

zhtml pages are html pages with some special commands that allow adding variables ('print' command), using cycles ('for' command), conditional operators ('if' command), etc.

The 'print' command (in zhtml) in the html page allows displaying the content of the web variables.

Each variable is associated to a set of parameters for content and format.

The Gateway interrogates the device connected to the serial port requesting the configured registers, performing the set conversions and formatting, and entering the result in the relevant web variable.

In the example above, the content of Input Register 30033 is requested to the device with Modbus 1 address. This value is converted according to a fixed table: DSt4600A Mode table.

List of parameters of web variables:

Modbus Address for the device to be interrogated – It is the Modbus address for the device to be interrogated for the datum. By default, it is set to 1.

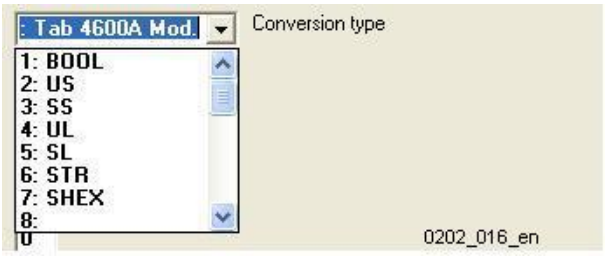
Activation / Register Type: It activates/deactivates the web variable and sets the register type (Input Register or Holding Register).

If the value is set to 0:OFF, the variable in deactivated, and no request via Modbus will be performed for this variable, which will then be empty.

Register to read – It sets which register needs to be read (if more registers need to be read, set the first one).

Number of registers to read – Check how many registers are taken by the information to be used and set the number of registers to be read in this field.

Conversion type – It sets the conversion type to be applied to the datum read in the registers.



Conversion Types

No.	Conversion Type	Description
1	**BOOL**	Boolean value (0 or 1)
2	**US**	Whole number without sign (Unsigned Short)
3	**SS**	Whole number with sign (Signed Short)
4	**UL**	Long whole number without sign (Unsigned Long)
5	**SL**	Long whole number with sign (Signed Long)
6	**STR**	String
7	**SHEX**	Hexadecimal Value
12	**US Max Val.**	Whole number without sign (Unsigned Short) with possibility to check if
13	**SS Max Val.**	Whole number with sign (Signed Short) with possibility to check if not
14	**UL Max Val.**	Long whole number without sign (Unsigned Long) with possibility to
15	**SL Max Val.**	Long whole number with sign (Signed Long) with possibility to check if
21	**Tab Engine St.**	Engine status table for DST4601
22	**Tab Key Pos**	Key position table for DST4601
23	**Tab Commut.**	Commutation status table for DST4601
24	**Tab Load Type**	Load type for DST4601
25	**Tab 4600A Mod.**	Mode table for DST4600A
26	**Tab 4600A Engine**	Engine status table for DST4600A
27	**Tab 4600A Comm.**	Commutation status table for DST4600A

Difference between normal conversions and with maximum value control (Max Val.): The conversion types bearing the Max Val. allow detecting the invalid values. When the relevant value reaches the maximum positive value (US = FFFFh, SS = 7FFFh, …), some dashes will be displayed instead of the numerical value.

Number of Divide Bits –If the whole numbers have decimals, the fractional (or decimal) bit system will be used, that is the number of bits dedicated to the decimal information. For correct conversion, set the number of decimal bits for the variable taken. (for more information on fractional bits, please refer to the section about the Data transfer formats in the Modbus/TCP Gateway).

Insert in New Alive Status (NKA) – It is used to create the New Keep Alive message. It is therefore only enabled if the New Keep Alive option has been activated (see option "Keep Alive Message Type" in the "Alarms" section). A value different from zero tells the Gateway to enter the value of this register in the New Keep Alive (NKA) message. The New Keep Alive message can contain up to the value of 5 Modbus registers, and when the value of one of the registers entered is modified, the Gateway sends automatically the whole NKA message (without waiting for the preset time to elapse).

Multiplier (Floating point) – Not used. For future conversions, it will allow multiplying the value read by a coefficient.

Offset (Floating point) – Not used. For future conversions, it will allow adding an offset value to the value read.

Number of whole digits to display – To format datum display: it sets the maximum number of whole digits to be displayed.

Number of decimal digits to display – To format datum display: it sets the maximum number of decimal digits to be displayed.

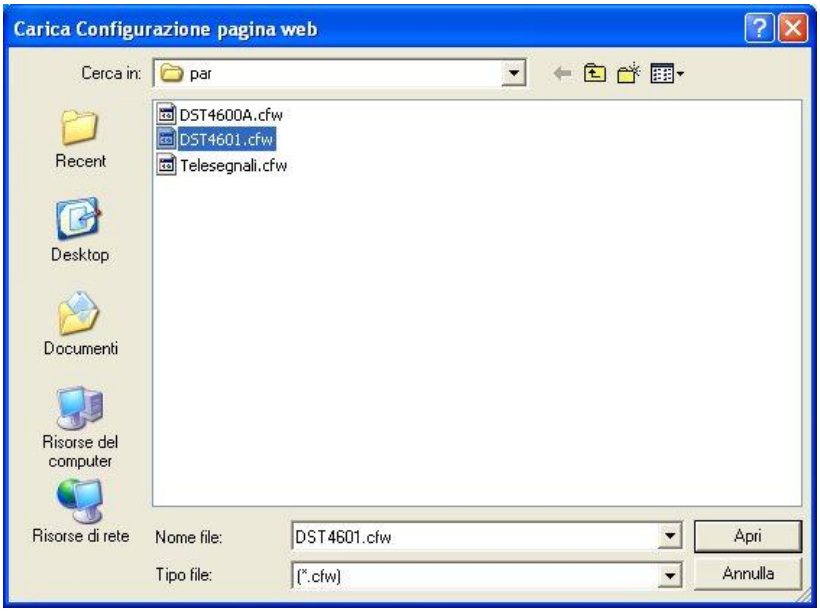
3.2 Loading and Saving Web Variables Configuration.

It is possible to save / load on a file the configuration for web variables on file with **.cfw** extension (**w**eb **c**on**f**iguration). By default, there are 3 base configuration for devices: DST4600A, DST4601, and Telesegnali.

For example, if the Gateway needs configuring before being connected to a DST4601 board, it is recommended to load the base configuration for DST4601. To perform this operation, click on the

button.

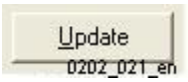
The navigation window to select the file to be loaded will be displayed:



Select the "**DST4601.cfw**" file and click on

.

The base configuration for the DST4601 is now displayed on the PC, but has not been transferred to the Gateway yet. It is now possible to check and modify it, if necessary. If the configuration has been modified, save it after renaming it.

Once the desired configuration has been finalised, it will be possible to transfer it to the Gateway by clicking on the 

button.

Confirmation for the operation to be performed will be required:

Press the **OK** button.

Wait for 2 or 3 seconds. Data will disappear shortly and will be then displayed again (they are read again directly by the Gateway). The operation is completed.

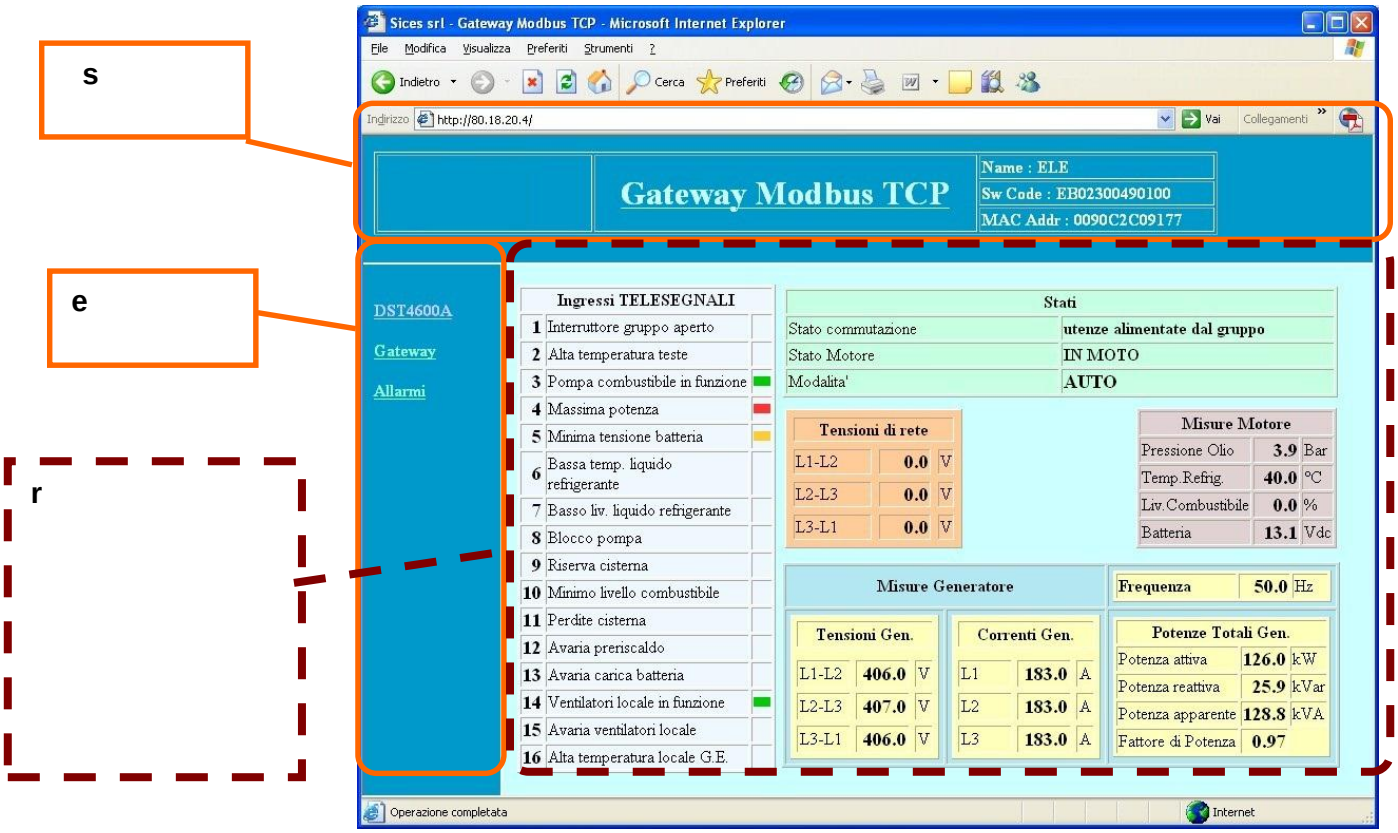
The update loads all the board parameters together with the web variables configuration. It does not load nor modify the web page. To load or modify the web page, please refer to the next section.

It is possible to perform the opposite operation, that is reading the configuration parameters for the web variables from the Gateway and then save them on a .cfw file.

3.3 Web Page Configuration.

The Gateway web page consists of 3 areas (called 'frames'):

1. **Header** frame (containing: Sices logo, name of the device, Mac address, and software code).
2. **Menu** frame (containing: invokable items in web pages).
3. **Data** frame (containing the html page invoked by the menu item).



The Data frame displays the page selected from the Menu frame:

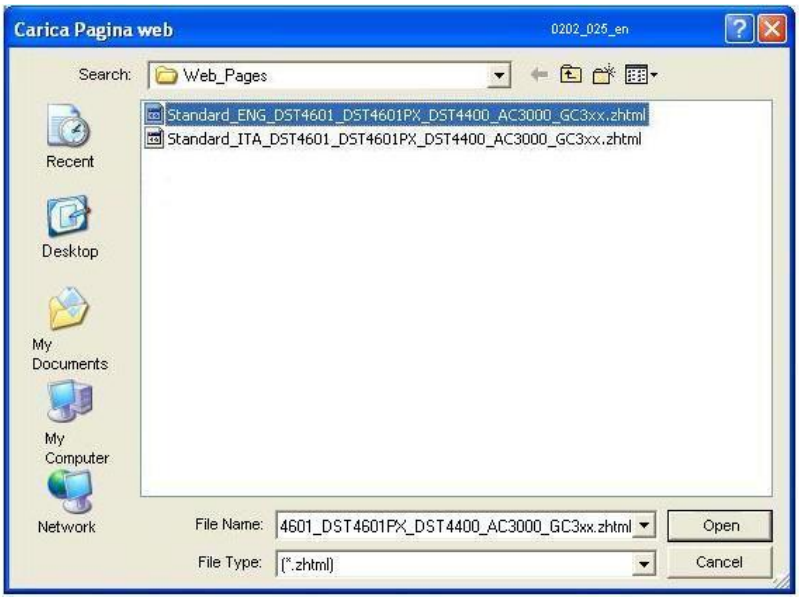
- Web page of device data (depending on the board used).
- Web page of the Gateway (containing the Gateway statuses: inputs/outputs, connected device).
- Web page of the alarms (displaying the alarm status and the list of activated alarms, if applicable). In case of activated alarms, it enables the alarm reset button. The alarm resetting sends a command to the Gateway, then forwarded to the connected device to reset the alarms. If the alarm is not active anymore, it will be reset, otherwise it will be displayed again.

The device web page can be modified and updated directly via Ethernet. The other web pages are fixed and stored in the Gateway firmware, and therefore cannot be modified.

The data page for the device is automatically refreshed by updating the displayed data. The refresh rate is contained in the web page and can therefore be modified. By default, it is set at 8 seconds.

To send a web page for a device to the Gateway, click on:

The window where to select the file to be sent to the Gateway will be then displayed:



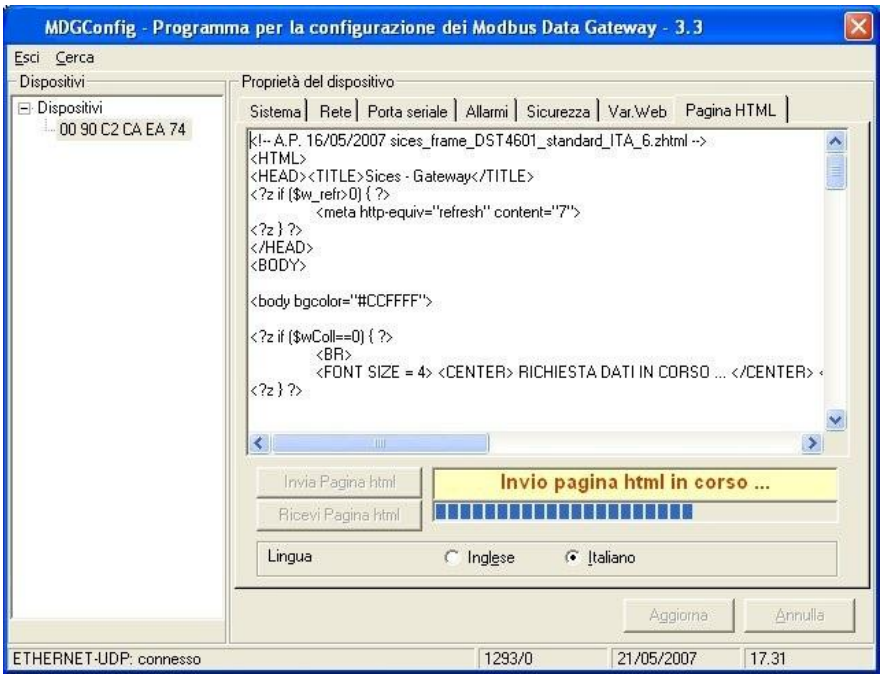
This file is not in a html format, but a zhtml one. Therefore, it cannot be directly created by a web page designer software (FrontPage, Dreamweaver, etc.), but it has to be managed by using an editor. It is also important to remember that this file must be smaller than 8,000 bytes.

To edit the web page it is necessary to be familiar with the html language and its zhtml extension for this device.

Default .zhtml files are however supplied for all the devices that can be connected.

Attention! The html page is directly sent by double-clicking on the relevant file or by clicking on "Open" (see figure below). Click on Cancel to stop sending the page.

It is recommended to make sure the current html page has been saved before sending the new one. If not, or in case of doubts, use the "Receive html page" option: This allows saving the zhtml source content for the data page currently on the Gateway on a PC file.



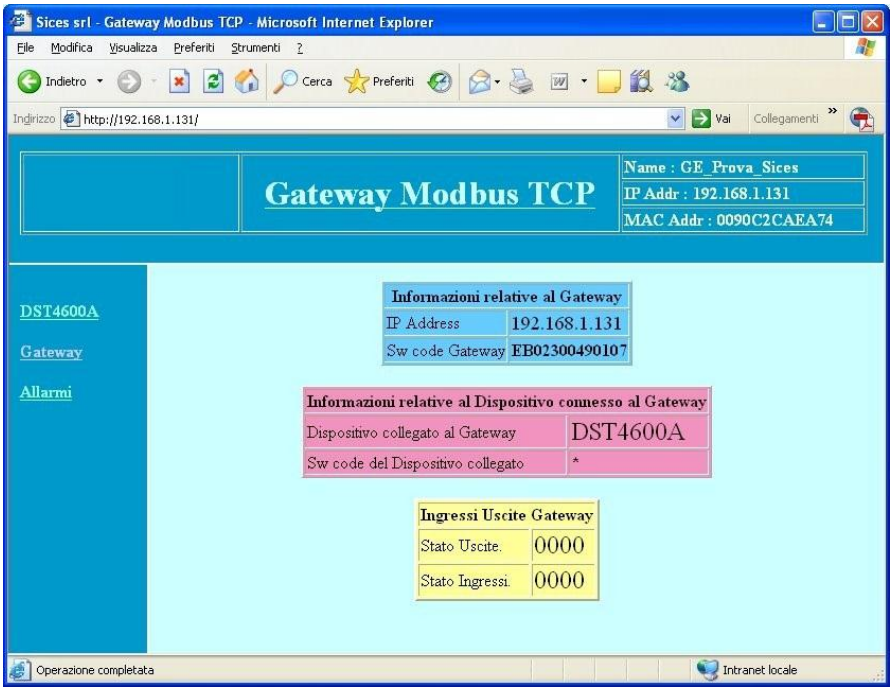
After sending the page, the following message will be displayed if the operation was successful:

The web page has been sent to the Gateway, which will then be able to send it when receiving a browser request.

3.4 Fixed Pages.

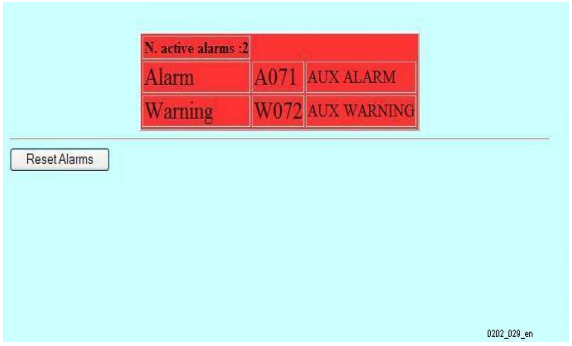
In addition to the Header frame and the Menu frame, the following web pages in the Gateway firmware are fixed and cannot be modified:

Gateway page

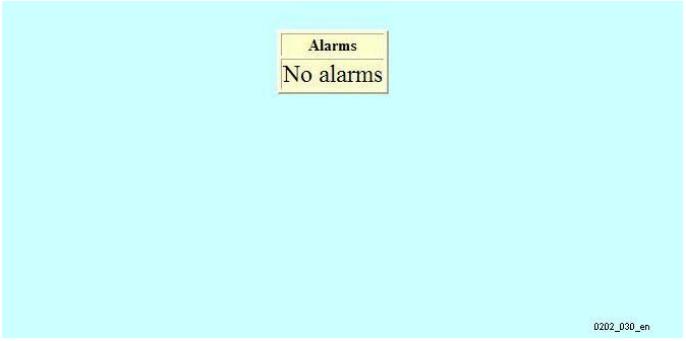


Alarms page (only for DST4601 and DST4600A devices):

Alarms (with active alarms) page



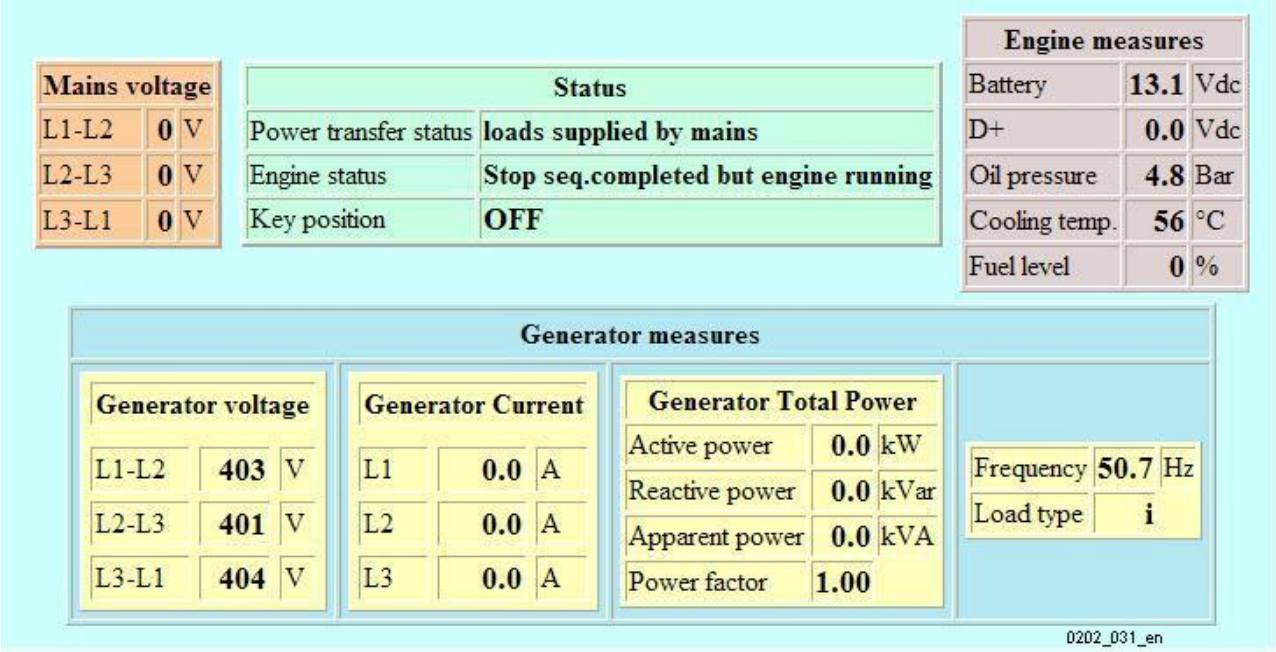
Alarms (with no active alarms) page



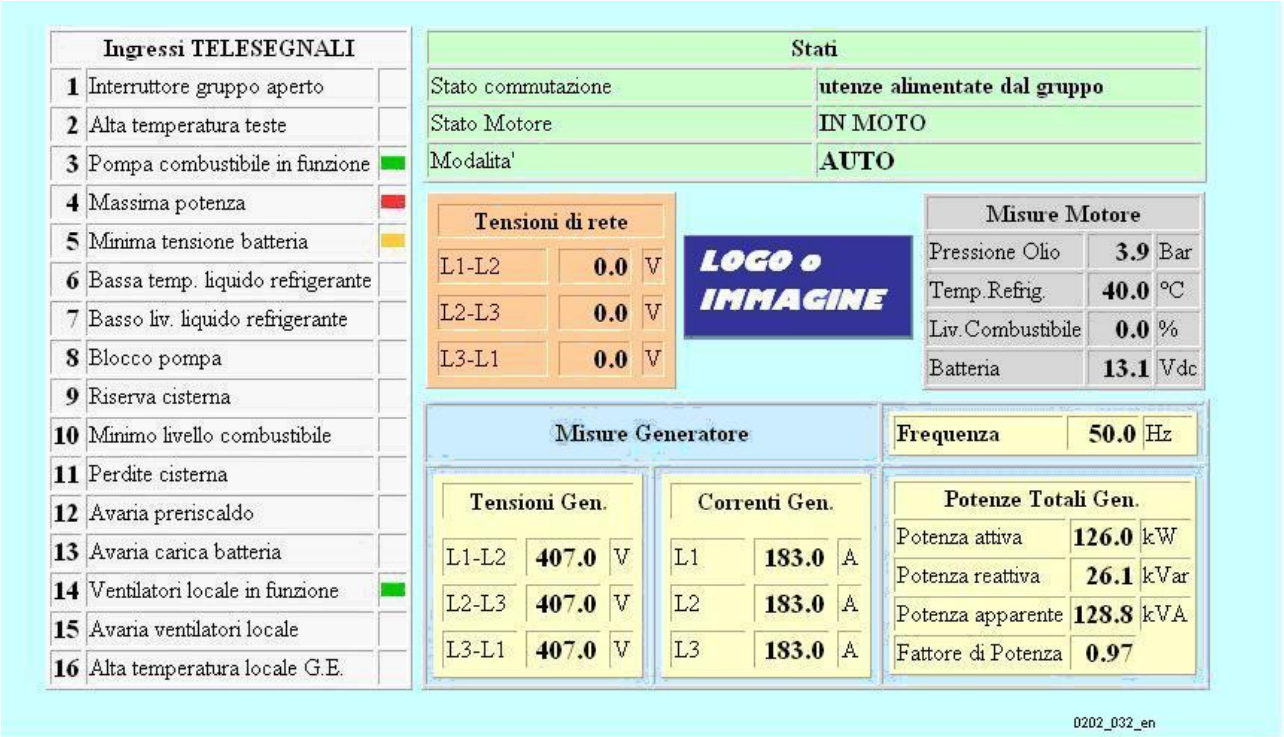
3.5 Standard Default Pages.

The web page in the data frame can be configured, that is it is possible to transfer the zhtml code of this page. There are some default pages that can be loaded on the gateway. Below, the list of the pre-configured pages:

DST4601 page



DST4600A page



Telesegnali page

4. Glossary

UDP

User Datagram Protocol. UDP is a simple connection-less protocol for transferring datagrams. It is not particularly reliable: It sends datagrams but provides no guarantees for delivery. The applications using it need therefore to check the service reliability. It allows sending messages via broadcast, to all the devices connected to the network. It can connect to a network device without knowing its IP address.

TCP

Transmission Control Protocol. Data transport protocol used in Internet. It ensures the received files are not corrupted by transmitting data in 'segments'; the receiving system then sends its messages when receiving these segmented data.

HTML

HyperText Markup Language. It is the hypertext/hypermedia programming language used for the documents destined to the World Wide Web. Browsers recognize 'tags', html information, and reorganise and display them on the user's screen.

ZHTML

HTML language extension used to add commands and variables. It adds tags with special commands for printing variables (print), for cycles (for), and for conditional operators (if), etc.

It is edited in the board and then transformed into HTML code to be sent to the web browsers.

ModBus

Serial communication protocol designed in 1979 by Modicon to be used with its PLCs. It is now the most widely available tool for industrial equipment and electronic device connection.

Formats:

Modbus RTU = binary coding, compact, but less readable.

Modbus ASCII = more extended coding, but more readable.

IP Address

Each computer or device is identified on the Internet by a numeric address of 4 groups of numbers (from 0 to 255) with a full stop as separator (for example: 188.147.6.90). Each IP address can have a corresponding DNS address (for example: www.xyz.com).

Frame

It is an independent area in a WEB page. Frames allow spitting the BROWSER window in more independent documents, as if they were separate windows with a size that can be defined in percentage or in a fixed setup.

MAC

MAC address is also known as physical, Ethernet, or LAN address. It is a 48 bit code (6 byte) uniquely assigned to each Ethernet network board worldwide.

Ethernet

It is a standard protocol for boards and cables for fast computer connection on a local network (LAN). Originally designed in 1976 by Xerox, Intel and Digital for 10 Mbps local networks. It is described in the IEEE 802.3 protocol for the Ethernet standard. Computers in an Ethernet network can also be of different types or use different operating systems. It has a Bus Architecture and it is based on the CSMA/CD (Carrier Sense Multiple Access with Collision Detection) protocol. Communication cards must be installed on the computers or attached systems. These cards connect to the network via a coaxial cable or a telephone twisted pair cable. The transmitted datagrams length can vary and can be up to 1,500 bytes. Technology has further developed with time, and the Ethernet communication standard is now able to transmit up to 1,000 Mbps (fast Ethernet).

TCP Port, UDP Port

TCP and UDP protocols introduce the idea of communication port. To be exact, each TCP or UDP datagram contains a sender port and a destination port. At the IP level, they will also contain the IP address information of the sender and of the receiver.

For a datagram to be received, the destination port needs to be listening on the set port, otherwise the datagram cannot be delivered. In general, an application that is used for network services needs to be always listening for the same port, so that those who want to access it know how to do it. On the other side, an application that wants to access a service needs to open an unused local port, and then TCP or UDP datagrams can be sent (according to the protocol characteristics at the higher level) to the service address and port. The application performing the service needs to know to which port to answer, as this information is contained in the TCP and UDP datagrams.

http

(Hyper Text Transfer Protocol) - It is the fundamental protocol for the World Wide Web, to transfer on the network the hypertext documents between the Web clients (browser) and the servers that manage and send these documents.

Gateway

Protocol converter. It is an hardware device to connect networks that would not be compatible otherwise. It converts data codes and transmission protocols to ensure interoperability.

DHCP

Dynamic Host Configuration Protocol. It is the protocol used to assign IP addresses to network computers. DHCP replaces the outdated BOOTP, with which it is compatible backwards.

Browser

A browser is a program that allows Internet surfing, to be exact, browsing the World Wide Web. The main function of a browser is to read the HTML code (and more recently, the XHTML code) and to display it as hypertext.

DST4600A, DST4601, DST4601PX, DST4400

Electronic devices by Sices to control generator sets.

Telesegnali

Electronic device by Sices to command and control digital inputs and outputs. It can be connected to other devices via serial port by using a ModBus protocol.

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